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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,394	03/31/2000	William Alan Holder	END9-2000-0013-US1	2193

30400 7590 12/01/2004

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EXAMINER

WOOD, WILLIAM H

ART UNIT PAPER NUMBER

2124

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,394

Applicant(s)

HOLDER ET AL.

Examiner

William H. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-9,11-14,16-19,21-25,27-30 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,11-14,16-19,21-25,27-30 and 32-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)*
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-4, 6-9, 11-14, 16-19, 21-25, 27-30 and 32-40 are pending and have been examined.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 August 2004 has been entered.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-4, 6-9, 11-14, 16-19, 21-25, 27-30 and 32-40 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. The independent claims 1, 11, 21 and 22 do not produce a useful, concrete and tangible result and thus do not provide a practical application. The claims simply call for a method/process of *communicating* involving a determining step and a selecting step, yet nothing is clearly produced. It is not even clear if anything is manipulated. The entire process appears abstract and without specific tangible form.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 5-8, 10, 15-18, 20, 21, 26-29, 31 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the product **System/390** mainframe from IBM (announced September 5, 1990) illustrated here by "System/390 Announcement" (referred to as **System**) and "Principles of Operation: Enterprise Systems Architecture/390" (referred to as **ESA**) in view of **Coutant** (USPN 6,293,712) in further view of **Breslau et al.** (USPN 5,774,728).

In regard to claim 1, **System/390** disclosed the limitations:

- ✦ *A method of communicating between programs having different machine context organizations (**System**: page 1, paragraph 6, "The new ESA/390 ...", and page 2, first paragraph under "Major Software Advances"; **ESA**: page 5-10 to 5-16), said method comprising:*
 - ✦ *a linkage service from a plurality of linkage services to be used in communicating between said calling program and a callee program, wherein the linkage service comprises an intermediary service routine between the calling program and the callee program (**ESA**: linkage stack and operations such as PROGRAM CALL), wherein said selecting is*

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based upon the determined savearea layout (ESA: page 5-10, right column, "The instructions PROGRAM CALL and PROGRAM TRANSFER provide the facility for linkage between programs ... in different address spaces"; and note linkage stack itself), and wherein said calling program and said callee program coexist within a single executable module but have different machine context organizations, the different machine context organizations comprising different register widths (ESA: page 5-14, left column, third paragraph; 24 and 31 bits)

System/390 did not explicitly disclose *determining, which savearea layout of a plurality of savearea layouts is to be used to save information relating to a calling program.*

Coutant demonstrated that it was known at the time of invention to implement systems with variable size stack frames or "plurality of savearea layouts" (Abstract; column 2, lines 5-12). It would have been obvious to one of ordinary skill in the art at the time of invention to implement a processor with a plurality of linkage services such as

System/390 with multiple savearea layouts as found in **Coutant's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to store only information which is necessary for the operation being performed (**Coutant**: column 2, lines 5-12).

System/390 and **Coutant** did not explicitly state selecting and determining at compile time. **Breslau** demonstrated that it was known at the time of invention to select a savearea and linkage service at compile time (column 2, lines 5-21 and 43-59). It would

have been obvious to one of ordinary skill in the art at the time of invention to implement the provided savearea for programs (frames) and linkage services of **System/390** with selecting and determining by a compiler as found in **Breslau's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide more simplistic authoring/software engineering by a programmer (column 3, lines 11-35) for example the author now has greater control over code through the use of compiler directives.

In regard to claim 5 (now within the independent claim), IBM's **System/390** and **Coutant** disclosed the limitation *wherein said selecting is based upon the determined savearea layout* (linkage service based on save area must be selected in order to properly send/retrieve the desired saved information to/from the stack).

In regard to claim 6, IBM's **System/390** and **Coutant** disclosed the limitations *wherein said linkage service comprises at least one of a calling service and a returning service* (**ESA**: page 5-10 to 5-16; at least PROGRAM CALL and RETURN).

In regard to claim 7, IBM's **System/390** and **Coutant** disclosed the limitation *wherein at least two savearea layouts of said plurality of savearea layouts coexist within a single module* (**ESA**: page 5-14, left column, third paragraph).

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In regard to claim 8, IBM's System/390 and **Coutant** disclosed the limitation *wherein said determining and said selecting enable use of a source code that has at least one of the following: a reduced amount of dual path source code (ESA: page 5-14, left column, third paragraph), natural parameter passing to/from a variety of caller types (ESA: page 5-10 to 5-16, multiple linkage instructions), and natural exploitation of a large architecture (ESA: page 5-14, left column, third paragraph), where desired.*

In regard to claim 10, IBM's System/390 and **Coutant** disclosed the limitation *wherein said different machine context organizations comprise different register sizes (ESA: page 5-14, left column, third paragraph).*

In regard to claims 11, 15, 16, 17, 18, 20, 21, 22, 26, 27, 28, 29 and 31, the limitations of the claims are related to the claims 1, 5, 6, 7, 8 and 10 and therefore are rejected in the same manner as claims 1, 5, 6, 7, 8 and 10.

In regard to claim 32, IBM's System/390 and **Coutant** disclosed the limitation *wherein said determining is based upon one or more attributes of the calling program (the attributes are whatever instructions which are found in the program and utilize a save area (stack frame)).*

In regard to claim 33, IBM's System/390 and **Coutant** disclosed the limitation *further comprising performing said determining and said selecting for a caller program and*

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calling program having similar machine context organizations (ESA: page 5-14, left column, third paragraph).

In regard to claim 34, IBM's System/390 and **Coutant** disclosed the limitations:

- ♦ *wherein said plurality of savearea layouts coexist within a single executable module (ESA: page 5-14, left column, third paragraph)*
- ♦ *wherein at least one savearea layout of said plurality of savearea layouts is usable when said calling program and said callee program have different machine context organizations (ESA: page 5-14, left column, third paragraph)*
- ♦ *wherein at least one other savearea layout of said plurality of savearea layouts is usable when a calling program and a callee program have similar machine context organizations (ESA: page 5-14, left column, third paragraph)*

In regard to claim 35-37, the limitations are the same as for claim 32-34 above with the exception that claims 35-37 are directed toward a system base claim. However, the base claims for both 32-34 and 35-37 are rejected in a similar manner, so claims 35-37 are rejected in the same manner as claims 32-34.

In regard to claims 38-40, the limitations are the same as for claim 32-34 above with the exception that claims 38-40 are directed toward a base claim with additional explicitly

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stated computing elements. However, the base claims for both 32-34 and 38-40 are rejected in a similar manner, so claims 38-40 are rejected in the same manner as claims 32-34.

6. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the product **System/390** mainframe from IBM (announced September 5, 1990) illustrated here by "System/390 Announcement" (referred to as **System**) and "Principles of Operation: Enterprise Systems Architecture/390" (referred to as **ESA**) in view of **Benson** (USPN 5,598,560) and in further view of **Breslau et al.** (USPN 5,774,728).

In regard to claim 1, **System/390** disclosed the limitations:

- ♦ *A method of communicating between programs having different machine context organizations (**System**: page 1, paragraph 6, "The new ESA/390 ...", and page 2, first paragraph under "Major Software Advances"; **ESA**: page 5-10 to 5-16), said method comprising:*
 - ♦ *a linkage service from a plurality of linkage services to be used in communicating between said calling program and a callee program, wherein the linkage service comprises an intermediary service routine between the calling program and the callee program (**ESA**: linkage stack and operations such as PROGRAM CALL), wherein said selecting is based upon the determined savearea layout (**ESA**: page 5-10, right column, "The instructions PROGRAM CALL and PROGRAM TRANSFER*

provide the facility for linkage between programs ... in different address spaces"; and note linkage stack itself), *and wherein said calling program and said callee program coexist within a single executable module but have different machine context organizations, the different machine context organizations comprising different register widths* (ESA: page 5-14, left column, third paragraph; 24 and 31 bits)

System/390 did not explicitly disclose *determining, which savearea layout of a plurality of savearea layouts is to be used to save information relating to a calling program.*

Benson demonstrated that it was known at the time of invention to require differing abilities to save register information as computers are upgraded from 16-bit to 32-bit to 64-bit processors (column 1, lines 49-52; column 4, line 54 to column 5, line 2). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the **System/390** architecture with a plurality of saveareas in order to increase communication between differing architectures as the system is upgraded from one register size to another as suggested by **Benson's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a system which can communicate between old and new programs (ESA: page 5-14, left column, third paragraph) as the system is being designed for the future (**Benson**: column 1, lines 49-52).

System/390 and **Benson** did not explicitly state selecting and determining at compile time. **Breslau** demonstrated that it was known at the time of invention to select a

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savearea and linkage service at compile time (column 2, lines 5-21 and 43-59). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the provided savearea for programs (16 verses 32 bits) and linkage services of **System/390** with selecting and determining by a compiler as found in **Breslau's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide more simplistic authoring/software engineering by a programmer (column 3, lines 11-35) for example the author now has greater control over code through the use of compiler directives.

In regard to claim 2, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining is based upon one or more attributes of said callee program* (**Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2; **ESA**: page 5-14, left column, third paragraph; and the above reasoning that old and new programs desire communication).

In regard to claim 3, IBM's System/390 and **Benson** disclosed the limitation *wherein one attribute of the one or more attributes comprises a size of one or more registers to be used by said callee program* (**Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2).

In regard to claim 4, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining is further based on a target architecture mode* (**Benson**: column 1,

lines 49-52; column 4, line 54 to column 5, line 2; and **ESA**: page 5-14, left column, third paragraph).

In regard to claim 5 (now within the independent claim), IBM's System/390 and **Benson** disclosed the limitation *wherein said selecting is based upon the determined savearea layout* (necessary (after considering the above combination of **Benson**) to properly link the saved information of two programs as found in **ESA**: page 5-14, left column, third paragraph, which demonstrates multiple linkage instructions for multiple programs; old and new programs desire to communicate).

In regard to claim 6, IBM's System/390 and **Benson** disclosed the limitations *wherein said linkage service comprises at least one of a calling service and a returning service* (**ESA**: page 5-10 to 5-16; at least PROGRAM CALL and RETURN).

In regard to claim 7, IBM's System/390 and **Benson** disclosed the limitation *wherein at least two savearea layouts of said plurality of savearea layouts coexist within a single module* (**ESA**: page 5-14, left column, third paragraph).

In regard to claim 8, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining and said selecting enable use of a source code that has at least one of the following: a reduced amount of dual path source code* (**ESA**: page 5-14, left column, third paragraph), *natural parameter passing to/from a variety of caller types*

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(**ESA**: page 5-10 to 5-16, multiple linkage instructions), *and natural exploitation of a large architecture* (**ESA**: page 5-14, left column, third paragraph), *where desired*.

In regard to claim 9, IBM's System/390 and **Benson** disclosed the limitation *wherein said source code comprises at least one common name usable in referencing one or more analogous fields in at least two savearea layouts of said plurality of savearea layouts to reduce dual path source code* (inherent in two programs communicating as found in **Benson** and **ESA**: page 5-14, left column, third paragraph).

In regard to claim 10, IBM's System/390 and **Benson** disclosed the limitation *wherein said different machine context organizations comprise different register sizes* (**ESA**: page 5-14, left column, third paragraph; and **Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2).

In regard to claims 11-31, the limitations of the claims are related to the claims 1-10 and therefore are rejected in the same manner as claims 1-10.

In regard to claim 32, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining is based upon one or more attributes of the calling program* (**ESA**: page 5-14, left column, third paragraph; **Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2; and the above reasoning that old and new programs desire communication).

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In regard to claim 33, IBM's System/390 and **Benson** disclosed the limitation *further comprising performing said determining and said selecting for a caller program and calling program having similar machine context organizations* (ESA: page 5-14, left column, third paragraph).

In regard to claim 34, IBM's System/390 and **Benson** disclosed the limitations:

- ♦ *wherein said plurality of savearea layouts coexist within a single executable module* (ESA: page 5-14, left column, third paragraph)
- ♦ *wherein at least one savearea layout of said plurality of savearea layouts is usable when said calling program and said callee program have different machine context organizations* (ESA: page 5-14, left column, third paragraph)
- ♦ *wherein at least one other savearea layout of said plurality of savearea layouts is usable when a calling program and a callee program have similar machine context organizations* (ESA: page 5-14, left column, third paragraph)

In regard to claim 35-37, the limitations are the same as for claim 32-34 above with the exception that claims 35-37 are directed toward a system base claim. However, the base claims for both 32-34 and 35-37 are rejected in a similar manner, so claims 35-37 are rejected in the same manner as claims 32-34.

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In regard to claims 38-40, the limitations are the same as for claim 32-34 above with the exception that claims 38-40 are directed toward a base claim with additional explicitly stated computing elements. However, the base claims for both 32-34 and 38-40 are rejected in a similar manner, so claims 38-40 are rejected in the same manner as claims 32-34.

Response to Arguments

7. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection. It is noted, though, that **System/390** does provide for 24 bit and 31 bit machine contexts. Applicant's points regarding selecting and determining via compile time are addressed by the above amended rejections.

Correspondence Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood
November 24, 2004



TODD INGERS
PRIMARY EXAMINER